Cartagena Water Supply, Sewerage, and Environmental Management

Location: Cartagena
Type: Rehabilitation and expansion of water supply and sewerage networks
Size: 240,000 m^3 per day production capacity
Funding: Total: US$117,200,000
Private: US$4,600,000
Public: US$112,600,000
Objective: To improve water and sewerage services, facilitate the environmental cleanup of water bodies, and enhance sustainability of water and sewerage services.
Duration: 1999–2004
Scale: Urban

Summary

The implementation of cutting-edge water treatment and production technologies by a private partner has improved the living conditions of the poor and diminished public health risks. The long-term private-sector interest in developing Cartagena's water sector has helped make the water utility of Cartagena the most advanced in Latin America.

In-Country Principles That Attracted Nondonor Financing

- Capacity building and informed decision making
- Public participation in, and support of, sustainable development
- Institution building and access to justice and enforcement of laws

The most important principles that supported reform in the water sector in Cartagena, and, in turn, helped attract private-sector financing included decentralization, enactment of a legal framework that promotes private-sector participation, and subsidies and political commitments to support private-sector participation at the local and national government levels. Also important was a clear and transparent bidding process.

Other principles that helped attract private-sector financing included the following: informed and science-based decision making; strong, effective, and culturally appropriate institutional, policy, and legal frameworks; effective coordination among sectors; an emphasis on decision making at the lowest appropriate level; and consideration of water as an economic, social, and environmental good, including acknowledgment of the full costs of water management and water services, and transparent, equitable, and sufficient allocation of those costs throughout society. Systems of accountability, including full accounting of costs and benefits, were also important.

Financing

Total project investment was US$117,200,000. Of this, US$103,200,000 was for capital costs, and US$14,000,000 was for operations and maintenance.

Aguas de Cartagena (ACUACAR), the Cartagena Water Company, provided US$4,600,000 in private funds. Public funding came from the Government of Colombia (US$20,000,000, the District of Cartagena (US$7,600,000), and the International Bank for Reconstruction and Development (IBRD) (US$85,000,000).

The "mixed-capital company model," under which the private sector provides investments as permitted by the applied tariffs and the public sector provides the balance of the funding required to achieve the performance targets set by the public sector, has achieved excellent results in Cartagena and transformed its utility to an exemplary institution.

The Project

The project had three objectives: (1) to improve the water and sewerage services of Cartagena by expanding coverage, particularly in the city's poor neighborhoods; (2) to facilitate the environmental cleanup of water bodies surrounding the city by providing adequate collection, treatment, and disposal of the entire flow of the city's wastewater; and (3) to

improve the sustainability of water and sewerage services in Cartagena by leveraging bank support to shore up the private-sector participation model pioneered by ACUACAR, the city's water and sanitation utility, against the prospect of political interference.

The project rehabilitated and increased water production capacity to 270,000 m^3/d, rehabilitated and expanded water and sewerage networks to serve a population of about 1,000,000 inhabitants, and completed construction of a wastewater collection, conveyance, treatment, and disposal facility with a capacity of 4 m^3/s.

Providing water and sewerage services in poor neighborhoods helped improve living conditions and diminish public health risks. Cleanup of the water bodies surrounding Cartagena (Cartagena bay, beaches, the Cienaga coastal lagoon) boosted recreational uses of these water bodies and decreased health risks to residents and tourists.

Technical Data

The following cutting-edge technologies were used to accomplish the project's objectives: sewerage networks, wastewater conveyance systems, pressure pipes, pumping stations, wastewater treatment installations, effluent disposal through a submarine outfall, centralized control and operation systems, and modern integrated financial and commercial management technologies.

Wastewater screening in fine-opening rotating screens and grit removal in vortex-type grit chambers helps control pollution.

Performance Data

The project serves 134,031 water supply users and 107,912 sewerage facility users.

The following table illustrates how the project improved water supply and sewage coverage through 2001:

	Before Project (1994)	After Project (2001)
Water coverage	68%	91%
Sewerage coverage	56%	72%
Domestic metering	30%	99%
Unaccounted water	60%	41%
Water production capacity	160,000 m^3/day	270,000 m^3/day
Number of clients	84,143	117,194

Participants and Roles

The Municipality of Cartagena is an associate of the water utility and provides financial support. Aguas de Barcelona, the private operator of the water utility of Barcelona, Spain, operates the water utility of Cartagena, in association with the municipality. The Government of Colombia, through the Ministry of Economic Development, provides national government subsidies and political support, and the World Bank provides financing.

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